(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 May 2003 (22.05.2003)

PCT

(10) International Publication Number
WO 2003/042487 A3

(51) International Patent Classification[7]: E21B 43/10

(21) International Application Number:
PCT/US2002/036267

(22) International Filing Date:
12 November 2002 (12.11.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/339,013	12 November 2001 (12.11.2001)	US
60/338,996	12 November 2001 (12.11.2001)	US
60/363,829	13 March 2002 (13.03.2002)	US
60/387,961	12 June 2002 (12.06.2002)	US

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,

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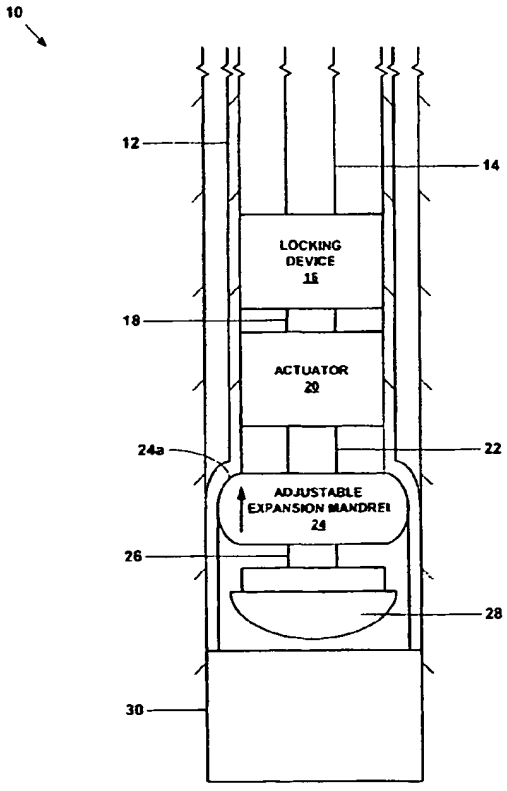
(54) Title: MONO DIAMETER WELLBORE CASING

(57) Abstract: An apparatus (10) and method for forming a mono diameter wellbore casing (12).



SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
1 July 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US02/36267

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : E21B 43/10
US CL : 166/207,277,382
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 166/121,182,202,207,212,216,217,242.8,277,382,387

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
East: (expan$4 with (tub$5 pip$3 casing$1 conduit$1))

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3,785,193 A (KINLEY et al) 15 January 1974 (15.01.1974), see entire document, especially Figs. 1-3.	1,4,19,21
A	US 4,168,747 A (YOUMANS) 25 September 1979 (25.09.1979), see entire document, especially Fig. 1.	7,8
A	US 5,957,195 A (BAILEY et al) 28 September 1999 (28.09.1999), see entire document, especially Figs. 2-3.	1

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
02 January 2003 (02.01.2003)

Date of mailing of the international search report
21 MAY 2004

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Form PCT/ISA/210 (second sheet) (July 1998)

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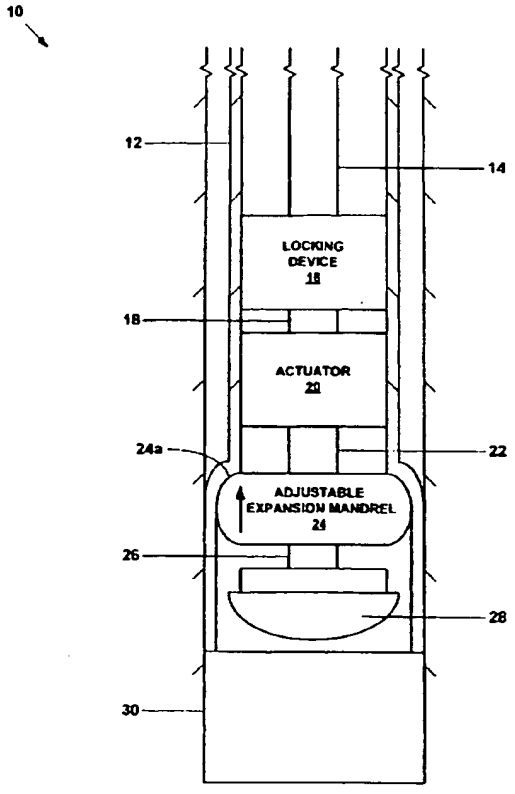

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Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

— *with amended claims*

(88) **Date of publication of the international search report:** 1 July 2004

Date of publication of the amended claims: 26 August 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

AMENDED CLAIMS

[received by the International Bureau on 16 July 2004 (16.07.04);
original claims 1-38 amended, claims 39-204 added]

Claims

What is claimed is:

1. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:

a float shoe adapted to mate with an end of the expandable tubular member;

an adjustable expansion mandrel coupled to the float shoe adapted to be controllably expanded to a larger outside dimension for radial expansion of the expandable tubular member or collapsed to a smaller outside dimension;

an actuator coupled to the adjustable expansion mandrel adapted to controllably displace the adjustable expansion mandrel relative to the expandable tubular member;

a locking device coupled to the actuator adapted to controllably engage the expandable tubular member; and

a support member coupled to the locking device.

2. A method for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

positioning an adjustable expansion mandrel within the expandable tubular member;

supporting the expandable tubular member and the adjustable expansion mandrel within the borehole;

lowering the adjustable expansion mandrel out of the expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel; and

displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member.

3. A method for forming a mono diameter wellbore casing, comprising:

positioning an adjustable expansion mandrel within a first expandable tubular member;

supporting the first expandable tubular member and the adjustable expansion mandrel within a borehole;

lowering the adjustable expansion mandrel out of the first expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel;

displacing the adjustable expansion mandrel upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the borehole;

positioning the adjustable expansion mandrel within a second expandable tubular member;

supporting the second expandable tubular member and the adjustable expansion mandrel within the borehole in overlapping relation to the first expandable tubular member;

lowering the adjustable expansion mandrel out of the second expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel; and

displacing the adjustable expansion mandrel upwardly relative to the second expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the borehole.

4. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:

a float shoe adapted to mate with an end of the expandable tubular member;

an adjustable expansion mandrel coupled to the float shoe adapted to be controllably expanded to a larger outside dimension for radial expansion of the expandable tubular member or collapsed to a smaller outside dimension;

an actuator coupled to the adjustable expansion mandrel adapted to controllably displace the adjustable expansion mandrel relative to the expandable tubular member;

a locking device coupled to the actuator adapted to controllably engage the expandable tubular member;

a support member coupled to the locking device; and

a sealing member for sealingly engaging the expandable tubular member adapted to define a pressure chamber above the adjustable expansion mandrel during radial expansion of the expandable tubular member.

5. A method for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

positioning an adjustable expansion mandrel within the expandable tubular member;

supporting the expandable tubular member and the adjustable expansion mandrel within the borehole;

lowering the adjustable expansion mandrel out of the expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel;

displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member within the borehole; and

pressurizing an interior region of the expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the expandable tubular member within the borehole.

6. A method for forming a mono diameter wellbore casing, comprising:

positioning an adjustable expansion mandrel within a first expandable tubular member;

supporting the first expandable tubular member and the adjustable expansion mandrel within a borehole;

lowering the adjustable expansion mandrel out of the first expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel;

displacing the adjustable expansion mandrel upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the borehole;

pressurizing an interior region of the first expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the first expandable tubular member within the borehole;

positioning the adjustable expansion mandrel within a second expandable tubular member;

supporting the second expandable tubular member and the adjustable expansion mandrel within the borehole in overlapping relation to the first expandable tubular member;

lowering the adjustable expansion mandrel out of the second expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel;

displacing the adjustable expansion mandrel upwardly relative to the second

expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the borehole; and

pressurizing an interior region of the second expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the second expandable tubular member within the borehole.

7. An apparatus for drilling a borehole within a subterranean formation and then radially expanding and plastically deforming an expandable tubular member within the drilled borehole, comprising:

a float shoe adapted to mate with an end of the expandable tubular member;

a drilling member coupled to the float shoe adapted to drill the borehole;

an adjustable expansion mandrel coupled to the float shoe adapted to be controllably expanded to a larger outside dimension for radial expansion of the expandable tubular member or collapsed to a smaller outside dimension;

an actuator coupled to the adjustable expansion mandrel adapted to controllably displace the adjustable expansion mandrel relative to the expandable tubular member;

a locking device coupled to the actuator adapted to controllably engage the expandable tubular member; and

a support member coupled to the locking device.

8. A method for drilling a borehole within a subterranean formation and then radially expanding and plastically deforming an expandable tubular member within the drilled borehole, comprising:

positioning an adjustable expansion mandrel within the expandable tubular member;

coupling a drilling member to an end of the expandable tubular member;

drilling the borehole using the drilling member;

positioning the adjustable expansion mandrel and the expandable tubular member within the drilled borehole;

lowering the adjustable expansion mandrel out of the expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel; and

displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member within the drilled borehole.

9. A method for forming a mono diameter wellbore casing within a borehole, comprising:

positioning an adjustable expansion mandrel within a first expandable tubular member;

coupling a drilling member to an end of the first expandable tubular member;

drilling a first section of the borehole using the drilling member;

supporting the first expandable tubular member and the adjustable expansion mandrel within the drilled first section of the borehole;

lowering the adjustable expansion mandrel out of the first expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel;

displacing the adjustable expansion mandrel upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the drilled first section of the borehole;

positioning the adjustable expansion mandrel within a second expandable tubular member;

coupling the drilling member to an end of the second expandable tubular member;

drilling a second section of the borehole using the drilling member;

supporting the second expandable tubular member and the adjustable expansion mandrel within the borehole in overlapping relation to the first expandable tubular member within the second drilled section of the borehole;

lowering the adjustable expansion mandrel out of the second expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel; and

displacing the adjustable expansion mandrel upwardly relative to the second expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the drilled second section of the borehole.

10. An apparatus for drilling a borehole within a subterranean formation and then radially expanding and plastically deforming an expandable tubular member within the drilled borehole, comprising:

a float shoe adapted to mate with an end of the expandable tubular member;

a drilling member coupled to the float shoe adapted to drill the borehole;

an adjustable expansion mandrel coupled to the float shoe adapted to be controllably expanded to a larger outside dimension for radial expansion of the expandable tubular member or collapsed to a smaller outside dimension;

an actuator coupled to the adjustable expansion mandrel adapted to controllably displace the adjustable expansion mandrel relative to the expandable tubular member;

a locking device coupled to the actuator adapted to controllably engage the expandable tubular member;

a support member coupled to the locking device; and

a sealing member for sealing engaging the expandable tubular member adapted to define a pressure chamber above the adjustable expansion mandrel during the radial expansion of the expandable tubular member.

11. A method for drilling a borehole within a subterranean formation and then radially expanding and plastically deforming an expandable tubular member within the drilled borehole, comprising:

positioning an adjustable expansion mandrel within the expandable tubular member;

coupling a drilling member to an end of the expandable tubular member;

drilling the borehole using the drilling member;

positioning the adjustable expansion mandrel and the expandable tubular member within the drilled borehole;

lowering the adjustable expansion mandrel out of the expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel;

displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member within the drilled borehole; and

pressuring an interior portion of the expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the expandable tubular member within the drilled borehole.

12. A method for forming a mono diameter wellbore casing within a borehole, comprising:

positioning an adjustable expansion mandrel within a first expandable tubular member;

coupling a drilling member to an end of the first expandable tubular member;

drilling a first section of the borehole using the drilling member;

supporting the first expandable tubular member and the adjustable expansion mandrel within the drilled first section of the borehole;

lowering the adjustable expansion mandrel out of the first expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel;

displacing the adjustable expansion mandrel upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the drilled first section of the borehole;

pressuring an interior portion of the first expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the first expandable tubular member within the first drilled section of the borehole;

positioning the adjustable expansion mandrel within a second expandable tubular member;

coupling the drilling member to an end of the second expandable tubular member;

drilling a second section of the borehole using the drilling member;

supporting the second expandable tubular member and the adjustable expansion mandrel within the borehole in overlapping relation to the first expandable tubular member within the second drilled section of the borehole;

lowering the adjustable expansion mandrel out of the second expandable tubular member;

increasing the outside dimension of the adjustable expansion mandrel;

displacing the adjustable expansion mandrel upwardly relative to the second expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the drilled second section of the borehole; and

pressuring an interior portion of the second expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic

deformation of the second expandable tubular member within the drilled second section of the borehole.

13. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:

a float shoe adapted to mate with an end of the expandable tubular member;

a first adjustable expansion mandrel coupled to the float shoe adapted to be controllably expanded to a first larger outside dimension for radial expansion of the expandable tubular member or collapsed to a first smaller outside dimension;

a second adjustable expansion mandrel coupled to the first adjustable expansion mandrel adapted to be controllably expanded to a second larger outside dimension for radial expansion of the expandable tubular member or collapsed to a second smaller outside dimension;

an actuator coupled to the first and second adjustable expansion mandrels adapted to controllably displace the first and second adjustable expansion mandrels relative to the expandable tubular member;

a locking device coupled to the actuator adapted to controllably engage the expandable tubular member; and

a support member coupled to the locking device;

wherein the first larger outside dimension of the first adjustable expansion mandrel is larger than the second larger outside dimension of the second adjustable expansion mandrel.

14. A method for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

positioning first and second adjustable expansion mandrels within the expandable tubular member;

supporting the expandable tubular member and the first and second adjustable expansion mandrels within the borehole;

lowering the first adjustable expansion mandrel out of the expandable tubular member;

increasing the outside dimension of the first adjustable expansion mandrel;

displacing the first adjustable expansion mandrel upwardly relative to the expandable

tubular member to radially expand and plastically deform a lower portion of the expandable tubular member;

displacing the first adjustable expansion mandrel and the second adjustable expansion mandrel downwardly relative to the expandable tubular member;

decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion mandrel;

displacing the second adjustable expansion mandrel upwardly relative to the expandable tubular member to radially expand and plastically deform portions of the expandable tubular member above the lower portion of the expandable tubular member;

wherein the outside dimension of the first adjustable expansion mandrel is greater than the outside dimension of the second adjustable expansion mandrel.

15. A method for forming a mono diameter wellbore casing, comprising:

positioning first and second adjustable expansion mandrels within a first expandable tubular member;

supporting the first expandable tubular member and the first and second adjustable expansion mandrels within a borehole;

lowering the first adjustable expansion mandrel out of the first expandable tubular member;

increasing the outside dimension of the first adjustable expansion mandrel;

displacing the first adjustable expansion mandrel upwardly relative to the first expandable tubular member to radially expand and plastically deform a lower portion of the first expandable tubular member;

displacing the first adjustable expansion mandrel and the second adjustable expansion mandrel downwardly relative to the first expandable tubular member;

decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion mandrel;

displacing the second adjustable expansion mandrel upwardly relative to the first expandable tubular member to radially expand and plastically deform portions of the first expandable tubular member above the lower portion of the

expandable tubular member;

positioning first and second adjustable expansion mandrels within a second expandable tubular member;

supporting the first expandable tubular member and the first and second adjustable expansion mandrels within the borehole in overlapping relation to the first expandable tubular member;

lowering the first adjustable expansion mandrel out of the second expandable tubular member;

increasing the outside dimension of the first adjustable expansion mandrel;

displacing the first adjustable expansion mandrel upwardly relative to the second expandable tubular member to radially expand and plastically deform a lower portion of the second expandable tubular member;

displacing the first adjustable expansion mandrel and the second adjustable expansion mandrel downwardly relative to the second expandable tubular member;

decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion mandrel; and

displacing the second adjustable expansion mandrel upwardly relative to the second expandable tubular member to radially expand and plastically deform portions of the second expandable tubular member above the lower portion of the second expandable tubular member;

wherein the outside dimension of the first adjustable expansion mandrel is greater than the outside dimension of the second adjustable expansion mandrel.

16. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:

a float shoe adapted to mate with an end of the expandable tubular member;

a first adjustable expansion mandrel coupled to the float shoe adapted to be controllably expanded to a first larger outside dimension for radial expansion of the expandable tubular member or collapsed to a first smaller outside dimension;

a second adjustable expansion mandrel coupled to the first adjustable expansion mandrel adapted to be controllably expanded to a second larger outside

dimension for radial expansion of the expandable tubular member or collapsed to a second smaller outside dimension;

an actuator coupled to the first and second adjustable expansion mandrels adapted to controllably displace the first and second adjustable expansion mandrels relative to the expandable tubular member;

a locking device coupled to the actuator adapted to controllably engage the expandable tubular member;

a support member coupled to the locking device; and

a sealing member for sealingly engaging the expandable tubular adapted to define a pressure chamber above the first and second adjustable expansion mandrels during the radial expansion of the expandable tubular member;

wherein the first larger outside dimension of the first adjustable expansion mandrel is larger than the second larger outside dimension of the second adjustable expansion mandrel.

17. A method for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

positioning first and second adjustable expansion mandrels within the expandable tubular member;

supporting the expandable tubular member and the first and second adjustable expansion mandrels within the borehole;

lowering the first adjustable expansion mandrel out of the expandable tubular member;

increasing the outside dimension of the first adjustable expansion mandrel;

displacing the first adjustable expansion mandrel upwardly relative to the expandable tubular member to radially expand and plastically deform a lower portion of the expandable tubular member;

pressurizing an interior region of the expandable tubular member above the first adjustable expansion mandrel during the radial expansion of the lower portion of the expandable tubular member by the first adjustable expansion mandrel;

displacing the first adjustable expansion mandrel and the second adjustable expansion mandrel downwardly relative to the expandable tubular member;

decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion

mandrel;

displacing the second adjustable expansion mandrel upwardly relative to the expandable tubular member to radially expand and plastically deform portions of the expandable tubular member above the lower portion of the expandable tubular member; and

pressurizing an interior region of the expandable tubular member above the second adjustable expansion mandrel during the radial expansion of the portions of the expandable tubular member above the lower portion of the expandable tubular member by the second adjustable expansion mandrel;

wherein the outside dimension of the first adjustable expansion mandrel is greater than the outside dimension of the second adjustable expansion mandrel.

18. A method for forming a mono diameter wellbore casing, comprising:

positioning first and second adjustable expansion mandrels within a first expandable tubular member;

supporting the first expandable tubular member and the first and second adjustable expansion mandrels within a borehole;

lowering the first adjustable expansion mandrel out of the first expandable tubular member;

increasing the outside dimension of the first adjustable expansion mandrel;

displacing the first adjustable expansion mandrel upwardly relative to the first expandable tubular member to radially expand and plastically deform a lower portion of the first expandable tubular member;

pressurizing an interior region of the first expandable tubular member above the first adjustable expansion mandrel during the radial expansion of the lower portion of the first expandable tubular member by the first adjustable expansion mandrel;

displacing the first adjustable expansion mandrel and the second adjustable expansion mandrel downwardly relative to the first expandable tubular member;

decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion mandrel;

displacing the second adjustable expansion mandrel upwardly relative to the first

expandable tubular member to radially expand and plastically deform portions of the first expandable tubular member above the lower portion of the expandable tubular member;

pressurizing an interior region of the first expandable tubular member above the second adjustable expansion mandrel during the radial expansion of the portions of the first expandable tubular member above the lower portion of the first expandable tubular member by the second adjustable expansion mandrel;

positioning first and second adjustable expansion mandrels within a second expandable tubular member;

supporting the first expandable tubular member and the first and second adjustable expansion mandrels within the borehole in overlapping relation to the first expandable tubular member;

lowering the first adjustable expansion mandrel out of the second expandable tubular member;

increasing the outside dimension of the first adjustable expansion mandrel;

displacing the first adjustable expansion mandrel upwardly relative to the second expandable tubular member to radially expand and plastically deform a lower portion of the second expandable tubular member;

pressurizing an interior region of the second expandable tubular member above the first adjustable expansion mandrel during the radial expansion of the lower portion of the second expandable tubular member by the first adjustable expansion mandrel;

displacing the first adjustable expansion mandrel and the second adjustable expansion mandrel downwardly relative to the second expandable tubular member;

decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion mandrel;

displacing the second adjustable expansion mandrel upwardly relative to the second expandable tubular member to radially expand and plastically deform portions of the second expandable tubular member above the lower portion of the second expandable tubular member; and

pressurizing an interior region of the second expandable tubular member above the

second adjustable expansion mandrel during the radial expansion of the portions of the second expandable tubular member above the lower portion of the second expandable tubular member by the second adjustable expansion mandrel;

wherein the outside dimension of the first adjustable expansion mandrel is greater than the outside dimension of the second adjustable expansion mandrel.

19. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:

a support member;

a locking device coupled to the support member and releasably coupled to the expandable tubular member;

an adjustable expansion mandrel adapted to be controllably expanded to a larger outside dimension for radial expansion and plastic deformation of the expandable tubular member or collapsed to a smaller outside dimension; and

an actuator coupled to the locking member and the adjustable expansion mandrel adapted to displace the adjustable expansion mandrel upwardly through the expandable tubular member to radially expand and plastically deform a portion of the expandable tubular member.

20. The apparatus of claim 19, further comprising:

a gripping assembly coupled to the support member and the actuator for controllably gripping at least one of the expandable tubular member or another tubular member.

21. The apparatus of claim 19, further comprising:

one or more cup seals coupled to the support member for sealingly engaging the expandable tubular member above the adjustable expansion mandrel.

22. The apparatus of claim 19, further comprising:

an expansion mandrel coupled to the adjustable expansion mandrel; and

a float collar assembly coupled to the adjustable expansion mandrel comprising:

a float valve assembly; and

a sealing sleeve coupled to the float valve assembly adapted to be radially expanded and plastically deformed by the expansion mandrel.

23. A method for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion mandrel within the borehole;

increasing the size of the adjustable expansion mandrel; and

displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform a portion of the expandable tubular member.

24. The method of claim 23, further comprising:

reducing the size of the adjustable expansion mandrel after the portion of the expandable tubular member has been radially expanded and plastically deformed.

25. The method of claim 24, further comprising:

fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member after reducing the size of the adjustable expansion mandrel.

26. The method of claim 25, further comprising:

permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.

27. The method of claim 26, further comprising:

injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and a preexisting structure after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

28. The method of claim 26, further comprising:

increasing the size of the adjustable expansion mandrel after permitting the position

of the expandable tubular member to float relative to the position of the hydraulic actuator.

29. The method of claim 28, further comprising:

displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform another portion of the expandable tubular member.

30. The method of claim 29, further comprising:

if the end of the other portion of the expandable tubular member overlaps with a preexisting structure, then

not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator; and

displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the other portion of the expandable tubular member that overlaps with the preexisting structure.

31. A method for forming a mono diameter wellbore casing within a borehole that includes a preexisting wellbore casing, comprising:

supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion mandrel within the borehole;

increasing the size of the adjustable expansion mandrel;

displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform a portion of the expandable tubular member; and

displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member and a portion of the preexisting wellbore casing that overlaps with an end of the remaining portion of the expandable tubular member.

32. The method of claim 31, further comprising:

reducing the size of the adjustable expansion mandrel after the portion of the

expandable tubular member has been radially expanded and plastically deformed.

33. The method of claim 32, further comprising:
fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member after reducing the size of the adjustable expansion mandrel.

34. The method of claim 33, further comprising:
permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.

35. The method of claim 34, further comprising:
injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the borehole after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

36. The method of claim 34, further comprising:
increasing the size of the adjustable expansion mandrel after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

37. The method of claim 36, further comprising:
displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member.

38. The method of claim 37, further comprising:
not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator; and
displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the remaining portion of the expandable tubular member that

overlaps with the preexisting wellbore casing after not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

39. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:

a support member;

an expansion device for radially expanding and plastically deforming the tubular member coupled to the support member; and

an actuator coupled to the support member for displacing the expansion device relative to the support member.

40. The apparatus of claim 39, further comprising:

a gripping device for gripping the tubular member coupled to the support member.

41. The apparatus of claim 40, wherein the gripping device comprises a plurality of movable gripping elements.

42. The apparatus of claim 41, wherein the gripping elements are moveable in a radial direction relative to the support member.

43. The apparatus of claim 39, further comprising:

a sealing device for sealing an interface with the tubular member coupled to the support member.

44. The apparatus of claim 43, wherein the sealing device seals an annulus defines between the support member and the tubular member.

45. The apparatus of claim 39, further comprising:

a locking device for locking the position of the tubular member relative to the support member.

46. The apparatus of claim 45, wherein the locking device comprises:

a pressure sensor for controllably unlocking the locking device from engagement with the

tubular member when the operating pressure within the apparatus exceeds a predetermined amount.

47. The apparatus of claim 45, wherein the locking device comprises:
a position sensor for controllably unlocking the locking device from engagement with the tubular member when the position of the actuator exceeds a predetermined amount.

48. The apparatus of claim 39, wherein the expansion device comprises:
a support member; and
a plurality of movable expansion elements coupled to the support member.

49. The apparatus of claim 48, further comprising:
an actuator coupled to the support member for moving the expansion elements between a first position and a second position;
wherein in the first position, the expansion elements do not engage the tubular member; and
wherein in the second position, the expansion elements engage the tubular member.

50. The apparatus of claim 49, wherein the expansion elements comprise:
a first set of expansion elements; and
a second set of expansion elements;
wherein the first set of expansion elements are interleaved with the second set of expansion elements.

51. The apparatus of claim 50, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

52. The apparatus of claim 50, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

53. The apparatus of claim 39, wherein the expansion device comprises an adjustable expansion device.

54. The apparatus of claim 39, wherein the expansion device comprises a plurality of

expansion devices.

55. The apparatus of claim 54, wherein at least one of the expansion devices comprises an adjustable expansion device.

56. The apparatus of claim 55, wherein the adjustable expansion device comprises:
a support member; and
a plurality of movable expansion elements coupled to the support member.

57. The apparatus of claim 56, further comprising:
an actuator coupled to the support member for moving the expansion elements between a first position and a second position;
wherein in the first position, the expansion elements do not engage the tubular member; and
wherein in the second position, the expansion elements engage the tubular member.

58. The apparatus of claim 57, wherein the expansion elements comprise:
a first set of expansion elements; and
a second set of expansion elements;
wherein the first set of expansion elements are interleaved with the second set of expansion elements.

59. The apparatus of claim 58, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

60. The apparatus of claim 58, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

61. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:
a support member;
an expansion device for radially expanding and plastically deforming the tubular member coupled to the support member; and
a sealing assembly for sealing an annulus defined between the support member and

the tubular member.

62. The apparatus of claim 61, further comprising:
a gripping device for gripping the tubular member coupled to the support member.

63. The apparatus of claim 62, wherein the gripping device comprises a plurality of movable gripping elements.

64. The apparatus of claim 63, wherein the gripping elements are moveable in a radial direction relative to the support member.

65. The apparatus of claim 61, further comprising:
a locking device for locking the position of the tubular member relative to the support member.

66. The apparatus of claim 65, wherein the locking device comprises:
a pressure sensor for controllably unlocking the locking device from engagement with the tubular member when the operating pressure within the apparatus exceeds a predetermined amount.

67. The apparatus of claim 65, wherein the locking device comprises:
a position sensor for controllably unlocking the locking device from engagement with the tubular member when the position of a portion of the apparatus exceeds a predetermined amount.

68. The apparatus of claim 61, further comprising:
an actuator for displacing the expansion device relative to the support member.

69. The apparatus of claim 68, wherein the actuator comprises means for transferring torsional loads between the support member and the expansion device.

70. The apparatus of claim 68, wherein the actuator comprises a plurality of pistons positioned within corresponding piston chambers.

71. The apparatus of claim 61, wherein the expansion device comprises:
a support member; and
a plurality of movable expansion elements coupled to the support member.

72. The apparatus of claim 71, further comprising:
an actuator coupled to the support member for moving the expansion elements between a first position and a second position;
wherein in the first position, the expansion elements do not engage the tubular member; and
wherein in the second position, the expansion elements engage the tubular member.

73. The apparatus of claim 72, wherein the expansion elements comprise:
a first set of expansion elements; and
a second set of expansion elements;
wherein the first set of expansion elements are interleaved with the second set of expansion elements.

74. The apparatus of claim 73, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

75. The apparatus of claim 73, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

76. The apparatus of claim 61, wherein the expansion device comprises an adjustable expansion device.

77. The apparatus of claim 61, wherein the expansion device comprises a plurality of expansion devices.

78. The apparatus of claim 77, wherein at least one of the expansion devices comprises an adjustable expansion device.

79. The apparatus of claim 78, wherein the adjustable expansion device comprises:
a support member; and

a plurality of movable expansion elements coupled to the support member.

80. The apparatus of claim 79, further comprising:

an actuator coupled to the support member for moving the expansion elements between a first position and a second position;

wherein in the first position, the expansion elements do not engage the tubular member; and

wherein in the second position, the expansion elements engage the tubular member.

81. The apparatus of claim 80, wherein the expansion elements comprise:

a first set of expansion elements; and

a second set of expansion elements;

wherein the first set of expansion elements are interleaved with the second set of expansion elements.

82. The apparatus of claim 81, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

83. The apparatus of claim 81, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

84. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:

a support member;

a first expansion device for radially expanding and plastically deforming the tubular member coupled to the support member; and

a second expansion device for radially expanding and plastically deforming the tubular member coupled to the support member.

85. The apparatus of claim 84, further comprising:

a gripping device for gripping the tubular member coupled to the support member.

86. The apparatus of claim 85, wherein the gripping device comprises a plurality of movable gripping elements.

87. The apparatus of claim 86, wherein the gripping elements are moveable in a radial direction relative to the support member.

88. The apparatus of claim 84, further comprising:
a sealing device for sealing an interface with the tubular member coupled to the support member.

89. The apparatus of claim 88, wherein the sealing device seals an annulus defines between the support member and the tubular member.

90. The apparatus of claim 84, further comprising:
a locking device for locking the position of the tubular member relative to the support member.

91. The apparatus of claim 90, wherein the locking device comprises:
a pressure sensor for controllably unlocking the locking device from engagement with the tubular member when the operating pressure within the apparatus exceeds a predetermined amount.

92. The apparatus of claim 90, wherein the locking device comprises:
a position sensor for controllably unlocking the locking device from engagement with the tubular member when the position of a portion of the apparatus exceeds a predetermined amount.

93. The apparatus of claim 84, further comprising:
an actuator for displacing the expansion device relative to the support member.

94. The apparatus of claim 93, wherein the actuator comprises means for transferring torsional loads between the support member and the expansion device.

95. The apparatus of claim 93, wherein the actuator comprises a plurality of pistons positioned within corresponding piston chambers.

96. The apparatus of claim 84, wherein at least one of the first second expansion devices comprise:
a support member; and
a plurality of movable expansion elements coupled to the support member.

97. The apparatus of claim 96, further comprising:
an actuator coupled to the support member for moving the expansion elements between a first position and a second position;
wherein in the first position, the expansion elements do not engage the tubular member; and
wherein in the second position, the expansion elements engage the tubular member.

98. The apparatus of claim 97, wherein the expansion elements comprise:
a first set of expansion elements; and
a second set of expansion elements;
wherein the first set of expansion elements are interleaved with the second set of expansion elements.

99. The apparatus of claim 98, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

100. The apparatus of claim 98, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

101. The apparatus of claim 84, wherein at least one of the first and second expansion devices comprise a plurality of expansion devices.

102. The apparatus of claim 101, wherein at least one of the first and second expansion device comprise an adjustable expansion device.

103. The apparatus of claim 102, wherein the adjustable expansion device comprises:
a support member; and
a plurality of movable expansion elements coupled to the support member.

104. The apparatus of claim 103, further comprising:

an actuator coupled to the support member for moving the expansion elements between a first position and a second position;

wherein in the first position, the expansion elements do not engage the tubular member; and

wherein in the second position, the expansion elements engage the tubular member.

105. The apparatus of claim 104, wherein the expansion elements comprise:

a first set of expansion elements; and

a second set of expansion elements;

wherein the first set of expansion elements are interleaved with the second set of expansion elements.

106. The apparatus of claim 105, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

107. The apparatus of claim 105, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

108. An apparatus for radially expanding and plastically deforming an expandable tubular member, comprising:

a support member;

a gripping device for gripping the tubular member coupled to the support member;

a sealing device for sealing an interface with the tubular member coupled to the support member;

a locking device for locking the position of the tubular member relative to the support member;

a first adjustable expansion device for radially expanding and plastically deforming the tubular member coupled to the support member;

a second adjustable expansion device for radially expanding and plastically deforming the tubular member coupled to the support member;

a packer coupled to the support member; and

an actuator for displacing one or more of the sealing assembly, first and second adjustable expansion devices, and packer relative to the support member.

109. The apparatus of claim 108, wherein the locking device comprises:
a pressure sensor for controllably unlocking the locking device from engagement with the tubular member when the operating pressure within the apparatus exceeds a predetermined amount.

110. The apparatus of claim 108, wherein the locking device comprises:
a position sensor for controllably unlocking the locking device from engagement with the tubular member when the position of a portion of the apparatus exceeds a predetermined amount.

111. The apparatus of claim 108, wherein the gripping device comprises a plurality of movable gripping elements.

112. The apparatus of claim 111, wherein the gripping elements are moveable in a radial direction relative to the support member.

113. The apparatus of claim 108, wherein the sealing device seals an annulus defines between the support member and the tubular member.

114. The apparatus of claim 108, wherein the actuator comprises means for transferring torsional loads between the support member and the expansion device.

115. The apparatus of claim 108, wherein the actuator comprises a plurality of pistons positioned within corresponding piston chambers.

116. The apparatus of claim 108, wherein at least one of the adjustable expansion devices comprise:
a support member; and
a plurality of movable expansion elements coupled to the support member.

117. The apparatus of claim 116, further comprising:
an actuator coupled to the support member for moving the expansion elements between a first position and a second position;

wherein in the first position, the expansion elements do not engage the tubular member; and

wherein in the second position, the expansion elements engage the tubular member.

118. The apparatus of claim 117, wherein the expansion elements comprise:

a first set of expansion elements; and

a second set of expansion elements;

wherein the first set of expansion elements are interleaved with the second set of expansion elements.

119. The apparatus of claim 118, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

120. The apparatus of claim 118, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

121. The apparatus of claim 108, wherein at least one of the adjustable expansion devicss comprise a plurality of expansion devices.

122. The apparatus of claim 121, wherein at least one of the adjustable expansion devices comprise:

a support member; and

a plurality of movable expansion elements coupled to the support member.

123. The apparatus of claim 122, further comprising:

an actuator coupled to the support member for moving the expansion elements between a first position and a second position;

wherein in the first position, the expansion elements do not engage the tubular member; and

wherein in the second position, the expansion elements engage the tubular member.

124. The apparatus of claim 123, wherein the expansion elements comprise:

a first set of expansion elements; and

a second set of expansion elements;

wherein the first set of expansion elements are interleaved with the second set of expansion elements.

125. The apparatus of claim 124, wherein in the first position, the first set of expansion elements are not axially aligned with the second set of expansion elements.

126. The apparatus of claim 124, wherein in the second position, the first set of expansion elements are axially aligned with the second set of expansion elements.

127. An actuator, comprising:
a tubular housing;
a tubular piston rod movably coupled to and at least partially positioned within the housing;
a plurality of annular piston chambers defined by the tubular housing and the tubular piston rod; and
a plurality of tubular pistons coupled to the tubular piston rod, each tubular piston movably positioned within a corresponding annular piston chamber.

128. The actuator of claim 127, further comprising means for transmitting torsional loads between the tubular housing and the tubular piston rod.

129. A method of radially expanding and plastically deforming an expandable tubular member within a borehole having a preexisting wellbore casing, comprising:
positioning the tubular member within the borehole in overlapping relation to the wellbore casing;
radially expanding and plastically deforming a portion of the tubular member to form a bell section; and
radially expanding and plastically deforming a portion of the tubular member above the bell section comprising a portion of the tubular member that overlaps with the wellbore casing;
wherein the inside diameter of the bell section is greater than the inside diameter of the radially expanded and plastically deformed portion of the tubular member above the bell section.

130. The method of claim 129, wherein radially expanding and plastically deforming a

portion of the tubular member to form a bell section comprises:

positioning an adjustable expansion device within the expandable tubular member;

supporting the expandable tubular member and the adjustable expansion device within the borehole;

lowering the adjustable expansion device out of the expandable tubular member;

increasing the outside dimension of the adjustable expansion device; and

displacing the adjustable expansion device upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member, wherein n is greater than or equal to 1.

131. A method for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion device within the borehole;

increasing the size of the adjustable expansion device; and

displacing the adjustable expansion device upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform a portion of the expandable tubular member.

132. The method of claim 131, further comprising:

reducing the size of the adjustable expansion device after the portion of the expandable tubular member has been radially expanded and plastically deformed.

133. The method of claim 132, further comprising:

fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member after reducing the size of the adjustable expansion device.

134. The method of claim 133, further comprising:

permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.

135. The method of claim 134, further comprising:

injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and a preexisting structure after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

136. The method of claim 134, further comprising:

increasing the size of the adjustable expansion device after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

137. The method of claim 136, further comprising:

displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform another portion of the expandable tubular member.

138. The method of claim 137, further comprising:

if the end of the other portion of the expandable tubular member overlaps with a preexisting structure, then

not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator; and

displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the other portion of the expandable tubular member that overlaps with the preexisting structure.

139. A method for forming a mono diameter wellbore casing within a borehole that includes a preexisting wellbore casing, comprising:

supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion device within the borehole;

increasing the size of the adjustable expansion device;

displacing the adjustable expansion device upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically

deform a portion of the expandable tubular member; and

displacing the adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member and a portion of the preexisting wellbore casing that overlaps with an end of the remaining portion of the expandable tubular member.

140. The method of claim 139, further comprising:

reducing the size of the adjustable expansion device after the portion of the expandable tubular member has been radially expanded and plastically deformed.

141. The method of claim 140, further comprising:

fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member after reducing the size of the adjustable expansion device.

142. The method of claim 141, further comprising:

permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.

143. The method of claim 142, further comprising:

injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the borehole after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

144. The method of claim 142, further comprising:

increasing the size of the adjustable expansion device after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

145. The method of claim 144, further comprising:

displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member.

146. The method of claim 145, further comprising:

not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator; and

displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the remaining portion of the expandable tubular member that overlaps with the preexisting wellbore casing after not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

147. A method of radially expanding and plastically deforming a tubular member, comprising:

positioning the tubular member within a preexisting structure;

radially expanding and plastically deforming a lower portion of the tubular member to form a bell section; and

radially expanding and plastically deforming a portion of the tubular member above the bell section.

148. The method of claim 147, wherein positioning the tubular member within a preexisting structure comprises:

locking the tubular member to an expansion device.

149. The method of claim 148, wherein positioning the tubular member within a preexisting structure comprises:

unlocking the tubular member from an expansion device if the operating pressure within the preexisting structure exceeds a predetermined amount.

150. The method of claim 148, wherein positioning the tubular member within a preexisting structure comprises:

unlocking the tubular member from an expansion device if the position of an actuator coupled to the tubular member exceeds a predetermined amount.

151. The method of claim 147, wherein radially expanding and plastically deforming a lower portion of the tubular member to form a bell section comprises:

lowering an expansion device out of an end of the tubular member; and

pulling the expansion device through the end of the tubular member.

152. The method of claim 151, wherein lowering an expansion device out of an end of the tubular member comprises:

lowering the expansion device out of the end of the tubular member; and

adjusting the size of the expansion device.

153. The method of claim 152, wherein the expansion device is adjustable to a plurality of sizes.

154. The method of claim 152, wherein the expansion device comprises a plurality of adjustable expansion devices.

155. The method of claim 154, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

156. The method of claim 151, wherein pulling the expansion device through the end of the tubular member comprises:

gripping the tubular member; and

pulling an expansion device through an end of the tubular member.

157. The method of claim 156, wherein gripping the tubular member comprises:

permitting axial displacement of the tubular member in a first direction; and

not permitting axial displacement of the tubular member in a second direction.

158. The method of claim 156, wherein pulling the expansion device through the end of the tubular member comprises:

pulling the expansion device through the end of the tubular member using an

actuator.

159. The method of claim 142, wherein radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:

lowering an expansion device out of an end of the tubular member; and

pulling the expansion device through the end of the tubular member.

160. The method of claim 159, wherein lowering an expansion device out of an end of the tubular member comprises:

lowering the expansion device out of the end of the tubular member; and

adjusting the size of the expansion device.

161. The method of claim 160, wherein the expansion device is adjustable to a plurality of sizes.

162. The method of claim 160, wherein the expansion device comprises a plurality of adjustable expansion devices.

163. The method of claim 162, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

164. The method of claim 159, wherein pulling the expansion device through the end of the tubular member comprises:

gripping the tubular member; and

pulling an expansion device through an end of the tubular member.

165. The method of claim 164, wherein gripping the tubular member comprises:

permitting axial displacement of the tubular member in a first direction; and

not permitting axial displacement of the tubular member in a second direction.

166. The method of claim 164, wherein pulling the expansion device through the end of the tubular member comprises:

pulling the expansion device through the end of the tubular member using an actuator.

167. The method of claim 159, wherein pulling the expansion device through the end of the tubular member comprises:

pulling the expansion device through the end of the tubular member using fluid pressure.

168. The method of claim 167, wherein pulling the expansion device through the end of the tubular member using fluid pressure comprises:

pressurizing an annulus within the tubular member above the expansion device.

169. The method of claim 147, wherein radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:

fluidicly sealing an end of the tubular member; and

pulling the expansion device through the tubular member.

170. The method of claim 169, wherein the expansion device is adjustable.

171. The method of claim 170, wherein the expansion device is adjustable to a plurality of sizes.

172. The method of claim 169, wherein the expansion device comprises a plurality of adjustable expansion devices.

173. The method of claim 172, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

174. The method of claim 169, wherein pulling the expansion device through the end of the tubular member comprises:

gripping the tubular member; and

pulling an expansion device through an end of the tubular member.

175. The method of claim 174, wherein pulling the expansion device through the end of the tubular member comprises:

pulling the expansion device through the end of the tubular member using an

actuator.

176. The method of claim 169, wherein pulling the expansion device through the end of the tubular member comprises:

pulling the expansion device through the end of the tubular member using fluid pressure.

177. The method of claim 176, wherein pulling the expansion device through the end of the tubular member using fluid pressure comprises:

pressurizing an annulus within the tubular member above the expansion device.

178. The method of claim 147, wherein radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:

overlapping the portion of the tubular member above the bell section with an end of a preexisting tubular member; and

pulling an expansion device through the overlapping portions of the tubular member and the preexisting tubular member.

179. The method of claim 178, wherein the expansion device is adjustable.

180. The method of claim 179, wherein the expansion device is adjustable to a plurality of sizes.

181. The method of claim 178, wherein the expansion device comprises a plurality of adjustable expansion devices.

182. The method of claim 181, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

183. The method of claim 178, wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:

gripping the tubular member; and

pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member.

184. The method of claim 183, wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:

pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using an actuator.

185. The method of claim 178, wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:

pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using fluid pressure.

186. The method of claim 185, wherein pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using fluid pressure comprises:

pressurizing an annulus within the tubular member above the expansion device.

187. The method of claim 147, further comprising:

injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the preexisting structure.

188. A method of injecting a hardenable fluidic sealing material into an annulus between a tubular member and a preexisting structure, comprising:

positioning the tubular member into the preexisting structure;

sealing off an end of the tubular member;

operating a valve within the end of the tubular member; and

injecting a hardenable fluidic sealing material through the valve into the annulus between the tubular member and the preexisting structure.

189. A method of engaging a tubular member, comprising:

positioning a plurality of elements within the tubular member; and

bringing the elements into engagement with the tubular member.

190. The method of claim 189, wherein the elements comprise:

a first group of elements; and

a second group of elements;

wherein the first group of elements are interleaved with the second group of elements.

191. The method of claim 189, wherein bringing the elements into engagement with the tubular member comprises:

bringing the elements into axial alignment.

192. The method of claim 189, wherein bringing the elements into engagement with the tubular member further comprises:

pivoting the elements.

193. The method of claim 189, wherein bringing the elements into engagement with the tubular member further comprises:

translating the elements.

194. The method of claim 189, wherein bringing the elements into engagement with the tubular member further comprises:

pivoting the elements; and

translating the elements.

195. The method of claim 189, wherein bringing the elements into engagement with the tubular member comprises:

rotating the elements about a common axis.

196. The method of claim 189, wherein bringing the elements into engagement with the tubular member comprises:

pivoting the elements about corresponding axes;

translating the elements; and

rotating the elements about a common axis.

197. The method of claim 189, further comprising:

preventing the elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value.

198. The method of claim 197, wherein preventing the elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value comprises:

sensing the inside diameter of the tubular member.

199. A locking device for locking a tubular member to a support member, comprising:

a radially movable locking device coupled to the support member for engaging an interior surface of the tubular member.

200. The device of claim 199, further comprising:

a pressure sensor for controllably unlocking the locking device from engagement with the tubular member when an operating pressure exceeds a predetermined amount.

201. The device of claim 199, further comprising:

a position sensor for controllably unlocking the locking device from engagement with the tubular member when a position exceeds a predetermined amount.

202. A method of locking a tubular member to a support member, comprising:

locking a locking element in a position that engages an interior surface of the tubular member.

203. The method of claim 202, further comprising:

controllably unlocking the locking element from engagement with the tubular member when an operating pressure exceeds a predetermined amount.

204. The method of claim 202, further comprising:

controllably unlocking the locking element from engagement with the tubular member when a position exceeds a predetermined amount.

205. A system for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

means for positioning an adjustable expansion mandrel within the expandable tubular

member;

means for supporting the expandable tubular member and the adjustable expansion mandrel within the borehole;

means for lowering the adjustable expansion mandrel out of the expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel; and

means for displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member.

206. A system for forming a mono diameter wellbore casing, comprising:

positioning an adjustable expansion mandrel within a first expandable tubular member;

means for supporting the first expandable tubular member and the adjustable expansion mandrel within a borehole;

means for lowering the adjustable expansion mandrel out of the first expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel;

means for displacing the adjustable expansion mandrel upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the borehole;

means for positioning the adjustable expansion mandrel within a second expandable tubular member;

means for supporting the second expandable tubular member and the adjustable expansion mandrel within the borehole in overlapping relation to the first expandable tubular member;

means for lowering the adjustable expansion mandrel out of the second expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel; and

means for displacing the adjustable expansion mandrel upwardly relative to the second expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the borehole.

207. A system for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

means for positioning an adjustable expansion mandrel within the expandable tubular member;

means for supporting the expandable tubular member and the adjustable expansion mandrel within the borehole;

means for lowering the adjustable expansion mandrel out of the expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel;

means for displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member within the borehole; and

means for pressurizing an interior region of the expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the expandable tubular member within the borehole.

208. A system for forming a mono diameter wellbore casing, comprising:

means for positioning an adjustable expansion mandrel within a first expandable tubular member;

means for supporting the first expandable tubular member and the adjustable expansion mandrel within a borehole;

means for lowering the adjustable expansion mandrel out of the first expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel;

means for displacing the adjustable expansion mandrel upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the borehole;

means for pressurizing an interior region of the first expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the first expandable tubular member within the borehole;

means for positioning the adjustable expansion mandrel within a second expandable tubular member;

means for supporting the second expandable tubular member and the adjustable expansion mandrel within the borehole in overlapping relation to the first expandable tubular member;

means for lowering the adjustable expansion mandrel out of the second expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel;

means for displacing the adjustable expansion mandrel upwardly relative to the second expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the borehole; and

means for pressurizing an interior region of the second expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the second expandable tubular member within the borehole.

209. A system for drilling a borehole within a subterranean formation and then radially expanding and plastically deforming an expandable tubular member within the drilled borehole, comprising:

means for positioning an adjustable expansion mandrel within the expandable tubular member;

means for coupling a drilling member to an end of the expandable tubular member;

means for drilling the borehole using the drilling member;

means for positioning the adjustable expansion mandrel and the expandable tubular member within the drilled borehole;

means for lowering the adjustable expansion mandrel out of the expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel; and

means for displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member within the drilled borehole.

210. A system for forming a mono diameter wellbore casing within a borehole, comprising:

means for positioning an adjustable expansion mandrel within a first expandable

tubular member;

means for coupling a drilling member to an end of the first expandable tubular member;

means for drilling a first section of the borehole using the drilling member;

means for supporting the first expandable tubular member and the adjustable expansion mandrel within the drilled first section of the borehole;

means for lowering the adjustable expansion mandrel out of the first expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel;

means for displacing the adjustable expansion mandrel upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the drilled first section of the borehole;

means for positioning the adjustable expansion mandrel within a second expandable tubular member;

means for coupling the drilling member to an end of the second expandable tubular member;

means for drilling a second section of the borehole using the drilling member;

means for supporting the second expandable tubular member and the adjustable expansion mandrel within the borehole in overlapping relation to the first expandable tubular member within the second drilled section of the borehole;

means for lowering the adjustable expansion mandrel out of the second expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel; and

means for displacing the adjustable expansion mandrel upwardly relative to the second expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the drilled second section of the borehole.

211. A system for drilling a borehole within a subterranean formation and then radially expanding and plastically deforming an expandable tubular member within the drilled borehole, comprising:

means for positioning an adjustable expansion mandrel within the expandable tubular

member;

means for coupling a drilling member to an end of the expandable tubular member;

means for drilling the borehole using the drilling member;

means for positioning the adjustable expansion mandrel and the expandable tubular member within the drilled borehole;

means for lowering the adjustable expansion mandrel out of the expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel;

means for displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member within the drilled borehole; and

means for pressuring an interior portion of the expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the expandable tubular member within the drilled borehole.

212. A system for forming a mono diameter wellbore casing within a borehole, comprising:

means for positioning an adjustable expansion mandrel within a first expandable tubular member;

means for coupling a drilling member to an end of the first expandable tubular member;

means for drilling a first section of the borehole using the drilling member;

means for supporting the first expandable tubular member and the adjustable expansion mandrel within the drilled first section of the borehole;

means for lowering the adjustable expansion mandrel out of the first expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel;

means for displacing the adjustable expansion mandrel upwardly relative to the first expandable tubular member m times to radially expand and plastically deform m portions of the first expandable tubular member within the drilled first section of the borehole;

means for pressuring an interior portion of the first expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the first expandable tubular member within the first drilled section of the borehole;

means for positioning the adjustable expansion mandrel within a second expandable tubular member;

means for coupling the drilling member to an end of the second expandable tubular member;

means for drilling a second section of the borehole using the drilling member;

means for supporting the second expandable tubular member and the adjustable expansion mandrel within the borehole in overlapping relation to the first expandable tubular member within the second drilled section of the borehole;

means for lowering the adjustable expansion mandrel out of the second expandable tubular member;

means for increasing the outside dimension of the adjustable expansion mandrel;

means for displacing the adjustable expansion mandrel upwardly relative to the second expandable tubular member n times to radially expand and plastically deform n portions of the second expandable tubular member within the drilled second section of the borehole; and

means for pressuring an interior portion of the second expandable tubular member above the adjustable expansion mandrel during the radial expansion and plastic deformation of the second expandable tubular member within the drilled second section of the borehole.

213. A system for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

means for positioning first and second adjustable expansion mandrels within the expandable tubular member;

means for supporting the expandable tubular member and the first and second adjustable expansion mandrels within the borehole;

means for lowering the first adjustable expansion mandrel out of the expandable tubular member;

means for increasing the outside dimension of the first adjustable expansion mandrel;

means for displacing the first adjustable expansion mandrel upwardly relative to the expandable tubular member to radially expand and plastically deform a lower portion of the expandable tubular member;

means for displacing the first adjustable expansion mandrel and the second

adjustable expansion mandrel downwardly relative to the expandable tubular member;

means for decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion mandrel;

means for displacing the second adjustable expansion mandrel upwardly relative to the expandable tubular member to radially expand and plastically deform portions of the expandable tubular member above the lower portion of the expandable tubular member;

wherein the outside dimension of the first adjustable expansion mandrel is greater than the outside dimension of the second adjustable expansion mandrel.

214. A system for forming a mono diameter wellbore casing, comprising:

means for positioning first and second adjustable expansion mandrels within a first expandable tubular member;

means for supporting the first expandable tubular member and the first and second adjustable expansion mandrels within a borehole;

means for lowering the first adjustable expansion mandrel out of the first expandable tubular member;

means for increasing the outside dimension of the first adjustable expansion mandrel;

means for displacing the first adjustable expansion mandrel upwardly relative to the first expandable tubular member to radially expand and plastically deform a lower portion of the first expandable tubular member;

means for displacing the first adjustable expansion mandrel and the second adjustable expansion mandrel downwardly relative to the first expandable tubular member;

means for decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion mandrel;

means for displacing the second adjustable expansion mandrel upwardly relative to the first expandable tubular member to radially expand and plastically deform portions of the first expandable tubular member above the lower portion of the expandable tubular member;

means for positioning first and second adjustable expansion mandrels within a second expandable tubular member;

means for supporting the first expandable tubular member and the first and second adjustable expansion mandrels within the borehole in overlapping relation to the first expandable tubular member;

means for lowering the first adjustable expansion mandrel out of the second expandable tubular member;

means for increasing the outside dimension of the first adjustable expansion mandrel;

means for displacing the first adjustable expansion mandrel upwardly relative to the second expandable tubular member to radially expand and plastically deform a lower portion of the second expandable tubular member;

means for displacing the first adjustable expansion mandrel and the second adjustable expansion mandrel downwardly relative to the second expandable tubular member;

means for decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion mandrel; and

means for displacing the second adjustable expansion mandrel upwardly relative to the second expandable tubular member to radially expand and plastically deform portions of the second expandable tubular member above the lower portion of the second expandable tubular member;

wherein the outside dimension of the first adjustable expansion mandrel is greater than the outside dimension of the second adjustable expansion mandrel.

215. A system for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

means for positioning first and second adjustable expansion mandrels within the expandable tubular member;

means for supporting the expandable tubular member and the first and second adjustable expansion mandrels within the borehole;

means for lowering the first adjustable expansion mandrel out of the expandable tubular member;

means for increasing the outside dimension of the first adjustable expansion

mandrel;

means for displacing the first adjustable expansion mandrel upwardly relative to the expandable tubular member to radially expand and plastically deform a lower portion of the expandable tubular member;

means for pressurizing an interior region of the expandable tubular member above the first adjustable expansion mandrel during the radial expansion of the lower portion of the expandable tubular member by the first adjustable expansion mandrel;

means for displacing the first adjustable expansion mandrel and the second adjustable expansion mandrel downwardly relative to the expandable tubular member;

means for decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion mandrel;

means for displacing the second adjustable expansion mandrel upwardly relative to the expandable tubular member to radially expand and plastically deform portions of the expandable tubular member above the lower portion of the expandable tubular member; and

means for pressurizing an interior region of the expandable tubular member above the second adjustable expansion mandrel during the radial expansion of the portions of the expandable tubular member above the lower portion of the expandable tubular member by the second adjustable expansion mandrel;

wherein the outside dimension of the first adjustable expansion mandrel is greater than the outside dimension of the second adjustable expansion mandrel.

216. A system for forming a mono diameter wellbore casing, comprising:

means for positioning first and second adjustable expansion mandrels within a first expandable tubular member;

means for supporting the first expandable tubular member and the first and second adjustable expansion mandrels within a borehole;

means for lowering the first adjustable expansion mandrel out of the first expandable tubular member;

means for increasing the outside dimension of the first adjustable expansion mandrel;

means for displacing the first adjustable expansion mandrel upwardly relative to the first expandable tubular member to radially expand and plastically deform a lower portion of the first expandable tubular member;

means for pressurizing an interior region of the first expandable tubular member above the first adjustable expansion mandrel during the radial expansion of the lower portion of the first expandable tubular member by the first adjustable expansion mandrel;

means for displacing the first adjustable expansion mandrel and the second adjustable expansion mandrel downwardly relative to the first expandable tubular member;

means for decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion mandrel;

means for displacing the second adjustable expansion mandrel upwardly relative to the first expandable tubular member to radially expand and plastically deform portions of the first expandable tubular member above the lower portion of the expandable tubular member;

means for pressurizing an interior region of the first expandable tubular member above the second adjustable expansion mandrel during the radial expansion of the portions of the first expandable tubular member above the lower portion of the first expandable tubular member by the second adjustable expansion mandrel;

means for positioning first and second adjustable expansion mandrels within a second expandable tubular member;

means for supporting the first expandable tubular member and the first and second adjustable expansion mandrels within the borehole in overlapping relation to the first expandable tubular member;

means for lowering the first adjustable expansion mandrel out of the second expandable tubular member;

means for increasing the outside dimension of the first adjustable expansion mandrel;

means for displacing the first adjustable expansion mandrel upwardly relative to the second expandable tubular member to radially expand and plastically deform a lower portion of the second expandable tubular member;

means for pressurizing an interior region of the second expandable tubular member above the first adjustable expansion mandrel during the radial expansion of the lower portion of the second expandable tubular member by the first adjustable expansion mandrel;

means for displacing the first adjustable expansion mandrel and the second adjustable expansion mandrel downwardly relative to the second expandable tubular member;

means for decreasing the outside dimension of the first adjustable expansion mandrel and increasing the outside dimension of the second adjustable expansion mandrel;

means for displacing the second adjustable expansion mandrel upwardly relative to the second expandable tubular member to radially expand and plastically deform portions of the second expandable tubular member above the lower portion of the second expandable tubular member; and

means for pressurizing an interior region of the second expandable tubular member above the second adjustable expansion mandrel during the radial expansion of the portions of the second expandable tubular member above the lower portion of the second expandable tubular member by the second adjustable expansion mandrel;

wherein the outside dimension of the first adjustable expansion mandrel is greater than the outside dimension of the second adjustable expansion mandrel.

217. A system for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

means for supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion mandrel within the borehole;

means for increasing the size of the adjustable expansion mandrel; and

means for displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform a portion of the expandable tubular member.

218. The system of claim 217, further comprising:

means for reducing the size of the adjustable expansion mandrel after the portion of the expandable tubular member has been radially expanded and plastically deformed.

219. The system of claim 218, further comprising:
means for fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member after reducing the size of the adjustable expansion mandrel.

220. The system of claim 219, further comprising:
means for permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.

221. The system of claim 220, further comprising:
means for injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and a preexisting structure after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

222. The system of claim 220, further comprising:
means for increasing the size of the adjustable expansion mandrel after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

223. The system of claim 222, further comprising:
means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform another portion of the expandable tubular member.

224. The system of claim 223, further comprising:
if the end of the other portion of the expandable tubular member overlaps with a preexisting structure, then
means for not permitting the position of the expandable tubular member to

float relative to the position of the hydraulic actuator; and

means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the other portion of the expandable tubular member that overlaps with the preexisting structure.

225. A system for forming a mono diameter wellbore casing within a borehole that includes a preexisting wellbore casing, comprising:

means for supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion mandrel within the borehole;

means for increasing the size of the adjustable expansion mandrel;

means for displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform a portion of the expandable tubular member; and

means for displacing the adjustable expansion mandrel upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member and a portion of the preexisting wellbore casing that overlaps with an end of the remaining portion of the expandable tubular member.

226. The system of claim 225, further comprising:

means for reducing the size of the adjustable expansion mandrel after the portion of the expandable tubular member has been radially expanded and plastically deformed.

227. The system of claim 226, further comprising:

means for fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member after reducing the size of the adjustable expansion mandrel.

228. The system of claim 227, further comprising:
means for permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.

229. The system of claim 228, further comprising:
means for injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the borehole after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

230. The system of claim 228, further comprising:
means for increasing the size of the adjustable expansion mandrel after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

231. The system of claim 230, further comprising:
means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member.

232. The system of claim 231, further comprising:
means for not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator; and
means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the remaining portion of the expandable tubular member that overlaps with the preexisting wellbore casing after not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

233. A system of radially expanding and plastically deforming an expandable tubular member within a borehole having a preexisting wellbore casing, comprising:

means for positioning the tubular member within the borehole in overlapping relation to the wellbore casing;

means for radially expanding and plastically deforming a portion of the tubular member to form a bell section; and

means for radially expanding and plastically deforming a portion of the tubular member above the bell section comprising a portion of the tubular member that overlaps with the wellbore casing;

wherein the inside diameter of the bell section is greater than the inside diameter of the radially expanded and plastically deformed portion of the tubular member above the bell section.

234. The system of claim 233, wherein radially expanding and plastically deforming a portion of the tubular member to form a bell section comprises:

means for positioning an adjustable expansion device within the expandable tubular member;

means for supporting the expandable tubular member and the adjustable expansion device within the borehole;

means for lowering the adjustable expansion device out of the expandable tubular member;

means for increasing the outside dimension of the adjustable expansion device; and

means for displacing the adjustable expansion device upwardly relative to the expandable tubular member n times to radially expand and plastically deform n portions of the expandable tubular member, wherein n is greater than or equal to 1.

235. A system for radially expanding and plastically deforming an expandable tubular member within a borehole, comprising:

means for supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion device within the borehole;

means for increasing the size of the adjustable expansion device; and

means for displacing the adjustable expansion device upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform a portion of the expandable tubular member.

236. The system of claim 235, further comprising:
means for reducing the size of the adjustable expansion device after the portion of the expandable tubular member has been radially expanded and plastically deformed.

237. The system of claim 236, further comprising:
means for fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member after reducing the size of the adjustable expansion device.

238. The system of claim 237, further comprising:
means for permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.

239. The system of claim 238, further comprising:
means for injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and a preexisting structure after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

240. The system of claim 238, further comprising:
means for increasing the size of the adjustable expansion device after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

241. The system of claim 240, further comprising:
means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform another portion of the expandable tubular member.

242. The system of claim 241, further comprising:
if the end of the other portion of the expandable tubular member overlaps with a preexisting structure, then

means for not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator; and

means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the other portion of the expandable tubular member that overlaps with the preexisting structure.

243. A system for forming a mono diameter wellbore casing within a borehole that includes a preexisting wellbore casing, comprising:

means for supporting the expandable tubular member, an hydraulic actuator, and an adjustable expansion device within the borehole;

means for increasing the size of the adjustable expansion device;

means for displacing the adjustable expansion device upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform a portion of the expandable tubular member; and

means for displacing the adjustable expansion device upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member and a portion of the preexisting wellbore casing that overlaps with an end of the remaining portion of the expandable tubular member.

244. The system of claim 243, further comprising:

means for reducing the size of the adjustable expansion device after the portion of the expandable tubular member has been radially expanded and plastically deformed.

245. The system of claim 244, further comprising:

means for fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member after reducing the size of the adjustable expansion device.

246. The system of claim 245, further comprising:

means for permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator after fluidicly sealing the radially expanded and plastically deformed end of the expandable tubular member.

247. The system of claim 246, further comprising:

means for injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the borehole after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

248. The system of claim 246, further comprising:

means for increasing the size of the adjustable expansion device after permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

249. The system of claim 248, further comprising:

means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member to radially expand and plastically deform the remaining portion of the expandable tubular member.

250. The system of claim 249, further comprising:

means for not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator; and

means for displacing the adjustable expansion cone upwardly relative to the expandable tubular member using the hydraulic actuator to radially expand and plastically deform the end of the remaining portion of the expandable tubular member that overlaps with the preexisting wellbore casing after not permitting the position of the expandable tubular member to float relative to the position of the hydraulic actuator.

251. A system for radially expanding and plastically deforming a tubular member, comprising:

means for positioning the tubular member within a preexisting structure;

means for radially expanding and plastically deforming a lower portion of the tubular member to form a bell section; and

means for radially expanding and plastically deforming a portion of the tubular member above the bell section.

252. The system of claim 251, wherein positioning the tubular member within a preexisting structure comprises:

means for locking the tubular member to an expansion device.

253. The system of claim 252, wherein positioning the tubular member within a preexisting structure comprises:

means for unlocking the tubular member from an expansion device if the operating pressure within the preexisting structure exceeds a predetermined amount.

254. The system of claim 252, wherein positioning the tubular member within a preexisting structure comprises:

means for unlocking the tubular member from an expansion device if the position of an actuator coupled to the tubular member exceeds a predetermined amount.

255. The system of claim 251, wherein radially expanding and plastically deforming a lower portion of the tubular member to form a bell section comprises:

means for lowering an expansion device out of an end of the tubular member; and

means for pulling the expansion device through the end of the tubular member.

256. The system of claim 255, wherein lowering an expansion device out of an end of the tubular member comprises:

means for lowering the expansion device out of the end of the tubular member; and

means for adjusting the size of the expansion device.

257. The system of claim 256, wherein the expansion device is adjustable to a plurality of sizes.

258. The system of claim 256, wherein the expansion device comprises a plurality of adjustable expansion devices.

259. The system of claim 258, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

260. The system of claim 255, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for gripping the tubular member; and

means for pulling an expansion device through an end of the tubular member.

261. The system of claim 260, wherein means for gripping the tubular member comprises:

means for permitting axial displacement of the tubular member in a first direction; and

means for not permitting axial displacement of the tubular member in a second direction.

262. The system of claim 260, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for pulling the expansion device through the end of the tubular member using an actuator.

263. The system of claim 246, wherein means for radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:

means for lowering an expansion device out of an end of the tubular member; and

means for pulling the expansion device through the end of the tubular member.

264. The system of claim 263, wherein means for lowering an expansion device out of an end of the tubular member comprises:

means for lowering the expansion device out of the end of the tubular member; and

means for adjusting the size of the expansion device.

265. The system of claim 264, wherein the expansion device is adjustable to a plurality of sizes.

266. The system of claim 264, wherein the expansion device comprises a plurality of adjustable expansion devices.

267. The system of claim 266, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

268. The system of claim 263, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for gripping the tubular member; and

means for pulling an expansion device through an end of the tubular member.

269. The system of claim 268, wherein means for gripping the tubular member comprises:

means for permitting axial displacement of the tubular member in a first direction; and

means for not permitting axial displacement of the tubular member in a second direction.

270. The system of claim 268, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for pulling the expansion device through the end of the tubular member using an actuator.

271. The system of claim 263, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for pulling the expansion device through the end of the tubular member using fluid pressure.

272. The system of claim 271, wherein means for pulling the expansion device through the end of the tubular member using fluid pressure comprises:

means for pressurizing an annulus within the tubular member above the expansion device.

273. The system of claim 251, wherein means for radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:

means for fluidicly sealing an end of the tubular member; and

means for pulling the expansion device through the tubular member.

274. The system of claim 273, wherein the expansion device is adjustable.

275. The system of claim 274, wherein the expansion device is adjustable to a plurality of sizes.

276. The system of claim 273, wherein the expansion device comprises a plurality of adjustable expansion devices.

277. The system of claim 276, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

278. The system of claim 273, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for gripping the tubular member; and

means for pulling an expansion device through an end of the tubular member.

279. The system of claim 278, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for pulling the expansion device through the end of the tubular member using an actuator.

280. The system of claim 273, wherein means for pulling the expansion device through the end of the tubular member comprises:

means for pulling the expansion device through the end of the tubular member using fluid pressure.

281. The system of claim 280, wherein means for pulling the expansion device through the end of the tubular member using fluid pressure comprises:

means for pressurizing an annulus within the tubular member above the expansion device.

282. The system of claim 251, wherein means for radially expanding and plastically deforming a portion of the tubular member above the bell section comprises:

means for overlapping the portion of the tubular member above the bell section with an end of a preexisting tubular member; and

means for pulling an expansion device through the overlapping portions of the tubular member and the preexisting tubular member.

283. The system of claim 282, wherein the expansion device is adjustable.

284. The system of claim 283, wherein the expansion device is adjustable to a plurality of sizes.

285. The system of claim 282, wherein the expansion device comprises a plurality of adjustable expansion devices.

286. The system of claim 285, wherein at least one of the adjustable expansion devices is adjustable to a plurality of sizes.

287. The system of claim 282, wherein means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:

means for gripping the tubular member; and

means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member.

288. The system of claim 287, wherein means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:

means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using an actuator.

289. The system of claim 282, wherein means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member comprises:

means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using fluid pressure.

290. The system of claim 289, wherein means for pulling the expansion device through the overlapping portions of the tubular member and the preexisting tubular member using fluid pressure comprises:

means for pressurizing an annulus within the tubular member above the expansion device.

291. The system of claim 251, further comprising:

means for injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the preexisting structure.

292. A system of injecting a hardenable fluidic sealing material into an annulus between a tubular member and a preexisting structure, comprising:

means for positioning the tubular member into the preexisting structure;

means for sealing off an end of the tubular member;

means for operating a valve within the end of the tubular member; and

means for injecting a hardenable fluidic sealing material through the valve into the annulus between the tubular member and the preexisting structure.

293. A system of engaging a tubular member, comprising:

means for positioning a plurality of elements within the tubular member; and

means for bringing the elements into engagement with the tubular member.

294. The system of claim 293, wherein the elements comprise:

a first group of elements; and

a second group of elements;

wherein the first group of elements are interleaved with the second group of elements.

295. The system of claim 293, wherein means for bringing the elements into engagement with the tubular member comprises:

means for bringing the elements into axial alignment.

296. The system of claim 293, wherein means for bringing the elements into engagement with the tubular member further comprises:

means for pivoting the elements.

297. The system of claim 189, wherein means for bringing the elements into engagement with the tubular member further comprises:

means for translating the elements.

298. The system of claim 293, wherein means for bringing the elements into engagement with the tubular member further comprises:

means for pivoting the elements; and

means for translating the elements.

299. The system of claim 293, wherein means for bringing the elements into engagement with the tubular member comprises:

means for rotating the elements about a common axis.

300. The system of claim 293, wherein means for bringing the elements into engagement with the tubular member comprises:

means for pivoting the elements about corresponding axes;

means for translating the elements; and

means for rotating the elements about a common axis.

301. The system of claim 293, further comprising:

means for preventing the elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value.

302. The system of claim 301, wherein means for preventing the elements from coming into engagement with the tubular member if the inside diameter of the tubular member is less than a predetermined value comprises:

means for sensing the inside diameter of the tubular member.

303. A system of locking a tubular member to a support member, comprising:

locking a locking element in a position that engages an interior surface of the tubular member.

304. The system of claim 303, further comprising:

means for controllably unlocking the locking element from engagement with the tubular member when an operating pressure exceeds a predetermined amount.

305. The system of claim 303, further comprising:

means for controllably unlocking the locking element from engagement with the tubular member when a position exceeds a predetermined amount.